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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,068	09/14/2000	Gerry R. Talbot	0939A-036911US	1454

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EXAMINER

DINH, NGOC V

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,068

Applicant(s)

TALBOT ET AL.

Examiner

NGOC V DINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 53,54 and 56-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 53-54,56-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to Amendment filed 11/05/2004.

Applicant's arguments filed 11/05/2004 have been considered by the Examiner and are deemed persuasive. Accordingly, the rejection of claims 53-54, 56- 70 based on Gilbertson in the office letter dated October 20, 2003 is respectfully withdrawn and the following rejection based on Baxter et al and Nishtala is applicable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 53-54, 56-70 are rejected under 35 U.S.C 103(a) as being unpatentable over Baxter et al PN 6026461 in view of Nishtala et al PN 5581729.

Per claims 53, 56, 64, 68-69:

Baxter teaches in a data processing system, a method for ordering a plurality of memory access requests, the method comprising: accepting the plurality of memory access requests [fig. 7; FIFO, col. 4, lines 12-20]; ordering/reordering [e.g., The requests are prioritized based on a shuffle code that ensures fairness, simultaneously, col. 7, line 1-5; col. 71, claim 1] the plurality of memory access requests [col. 6, line 65 to col. 7, line 5], wherein the plurality of memory access requests are ordered based on age [col. 49, lines 40-50]; after the ordering/reordering, servicing the plurality of memory requests [col. 21, lines 30-60; col. 22, lines 9-60].

Baxter does not teach access requests are ordered based on an availability of corresponding memory locations.

Nishtala teaches access requests are ordered based on an availability of corresponding memory locations [col. 2, lines 50-65].

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to further include Nishtala 's teaching into Baxter's processing system. Doing so would make optimal use of the system resources [col. 3, lines 1-2].

Per claims 54, 65:

Baxter teaches plurality of memory requests comprises at least three memory access requests [col. 6, lines 50-60].

Per claim 57:

The further limitation of "at least two memory access requests" would follow necessary. This is because ordering or reordering process needs at least two memory requests.

Per claims 58, 70:

Servicing is done sequentially [col. 58, lines 9-15].

Per claim 59:

Baxter teaches queue is a priority queue, wherein a first memory access requests with higher priority than a second memory access request is executed before second memory access request memory access request [col. 7, lines 60-65; col. 17, lines 40-65].

Per claim 60:

The further limitation "reordering result in a queue having a first memory access request with an availability target memory preceding a second memory access request with an unavailable target memory address" would follow necessary because the first memory access request is a request with higher priority than the second memory access request, therefore any available memory address at this moment must be reserved for the first request.

Per claims 61, 67:

The further limitation of "after servicing of plurality of memory access requests, returning results of servicing according to a received order of plurality of memory access requests by queue" would follow necessary. This is because the data associated with the stored requests in priority FIFO queues [FIFO, col. 4, lines 12-20] after being executed will be sent to the requestors in the order of First in First out [FIFO], [FIFO, col. 4, lines 12-20; col. 17, lines 40-65; col. 18, lines 1-65].

Per claims 62:

Baxter teaches the claimed limitations as mentioned above.

Baxter further teaches a request buffer for holding a plurality of memory access requests received in a first order [col. 7, lines 60-65]; a reordering unit [col. 6, line 65 to col. 7, line 5].

Nishtala inherently teaches an availability determiner for determining availability of memory locations [col. 2, lines 50-65], wherein a first memory request of plurality of memory access requests with an available memory location precedes a second memory request of plurality of memory access requests with an unavailable memory location. This is because in order to determine the availability of memory, the system must have some type of circuitry to detect the availability of the memory so as the available memory can be immediately assigned to the high priority request in order to reduce system latency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further include Nishtala 's teaching into Baxter's processing system. Doing so would make optimal use of the system resources [col. 3, lines 1-2].

Per claims 63, 66:

Baxter teaches an execution unit for executing plurality of memory access requests based on second order [fig. 29; col. 17, lines 40-65; col. 18, lines 1-65].

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc Dinh whose telephone number is (571) 272-4191. The examiner can normally be reached on Monday-Friday 8:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A. Sparks, can be reached on (571) 272-4201. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 (571) 272-2100 for regular communications and (703) 746-7238 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

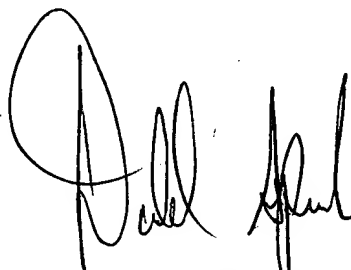


NGOC DINH

Patent Examiner

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November 23, 2004



DONALD SPARKS
SUPERVISORY PATENT EXAMINER